PES-0033

IN THE SPECIFICATION

Please substitute the following paragraph for paragraph [0022].

[0022] Use of the regen-system in a peak-shaving mode would entail operable communications between the regen-system (e.g., the owners/operators of the regen-system, and/or directly in operable communication with the regen-system) and the power grid, operable communication between the grid operators and the regen-system, and other various centralized or distributed utility control and monitoring systems. The regen-system may also be connected to utility systems responsible for metering and billing functions for the purpose of revenue reconciliation. Peak-shaving may be performed as a method to assist the main power source in time of high demand or, alternately, may be advantageously used more often whenever the cost of peak versus non-peak energy will provide the regen-system owner with a net-positive revenue source. In operation, the operator would engage (turn on), remotely or manually, the regen-system such that electricity would be supplied from the regen-system to a desired area, for a desired period of time or until regeneration the of the regen-system is needed to replenish various reactants (e.g., hydrogen). Note, regeneration during electricity production is also possible.

Please substitute the following paragraph for paragraph [0030].

[0030] Figure 2 is a block diagram representing one embodiment of an open-interface regenerative electrochemical cell system (regen-system) 1. The regen-system 1 comprises electrolysis module 10 in fluid communication with an oxygen-releasing vent 26 that communicates with the surrounding atmosphere 34. Optionally disposed between the electrolysis module 10 and the oxygen vent 26 is a water storage device 28. The water storage device 28 is in fluid communication with the water storage 16, which is in fluid communication with the cathode chamber of electrolysis module 10. On the anode side of the electrolysis module 10, hydrogen storage device(s) 14 is fluid communication with the electrolysis module 10, with an optional phase separation device 36 disposed therebetween. The hydrogen storage device 14 is further in fluid communication with the fuel cell module 12, preferably via dryer 38. Meanwhile, the fuel cell module is in fluid communication with the surrounding atmosphere 34 via oxygen/water phase separation device 66 and via water storage device 28 and oxygen vent 26. In addition, the fuel cell module 12 is in electrical communication with a power load 40 via an

optional power conditioner 20 ~~48~~ and optionally in electrical communication with a bridge power device 78, which ~~with~~ is also in electrical communication with the power load 40. Meanwhile, the electrolysis module 10 is in electrical communication with a power source 42, optionally via a power conditioner 44. Optionally, power source 42 and bridge power 78 can comprise a single device.

Please substitute the following paragraph for paragraph [0043].

[0043] In fluid communication with the hydrogen storage device 14 are optional dryer(s) 38, and the fuel cell module 12. The dryer 38 can comprise any device capable of removing water vapor from the hydrogen stream. Some water is removed from the saturated hydrogen stream at the phase separator 36. Saturated hydrogen gas from the phase separator then flows into dryer 38 (having a lower water saturation than the feed stream to separator 36 ~~38~~). The dryer 38 includes a bed of a moisture absorbent (and/or adsorbent) material, i.e., a desiccant. As the saturated hydrogen gas flows into the dryer 38, water with trace amounts of hydrogen entrained therein is removed and subsequently returned to the water source through a low-pressure hydrogen separator 74. Low pressure hydrogen separator 74 allows hydrogen to escape from the water stream due to the reduced pressure, and also recycles water to the water source ~~42~~ at a lower pressure than the water exiting the phase separation device 36. Alternatively, a diffuser may be provided in addition to the dryer 38, with a one-way check valve 72 preferably disposed between the storage device 36 and the dryer 38 to prevent high pressure backflow of the hydrogen gas.

Please substitute the following paragraph for paragraph [0051].

The power sources can introduce either AC or DC power to the system 1, preferably via a power conditioner 44. The power conditioner may provide control of the energy source, e.g., current control, voltage control, switch control, as well as combinations of these controls, and the like. The power conditioner 44, and/or the control system (not shown), can monitor voltage, current, or both, in order to control the power from the power conditioner 44.~~–x~~